

*all
Curt*

at least one initiation group capable of initiating a free radical polymerization process.

REMARKS

Claims 68-116 are pending in the subject application. Due to a previous election, including election of species, claims 68, 69, 72, 73, and 75-80 are currently being considered. In the Office Action, claims 68, 69, 72, 73 and 75-80 are rejected under 35 U.S.C. § 112, first paragraph, 35 U.S.C. § 112, second paragraph and 35 U.S.C. § 102(b) as anticipated by or in the alternative under 35 U.S.C. § 103(a) as obvious over U. S. Patent No. 4,007,165 issued to MacLeay et al. ("MacLeay").

Claim Rejections - 35 U.S.C. § 112, first paragraph

In the Office Action, claims 68, 69, 72, 73, and 75-80 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention. In the Examiner's opinion, the claims are omnibus and functionally claimed and that the limitations to the initiators in the claims are actually to the process to be carried out by the initiators, instead appearing to be use recitations. Applicants have canceled claims 68, 69, 72, 73, and 75-80 and replaced them with new claims 117-124. New claims 117-124 are directed to initiators described in the specification on pages 29-33, in the Examples, as well as elsewhere throughout the specification. For example, the multifunctional initiator compound of claim 117 are described on page 31, lines 19-26 and page 32, lines 5-14; the subject matter of claim 118 may be found on page 31, lines 19-26; the subject matter of claims 119 and 124 may be found on page 31, lines 8-9 and lines 19-26; the subject matter of claims 120, 122 and 123 may be found throughout the section on initiators on pages 29-33; and the disclosure of pages 29-33 combined with Examples 182 and 183 describe the subject matter of claim 121. Applicants respectfully submit that new claims 117-124 are

described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention.

Claim Rejections - 35 U.S.C. § 112, second paragraph

In the Office Action, claims 68, 69, 72, 73, and 75-80 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. As stated above, Applicants have canceled claims 68, 69, 72, 73, and 75-80 and provide new claims 117-124. The new claims provide limitations which are directed toward the composition of the initiators and not to the process to be carried out by them, thereby distinctly claiming the subject matter which Applicants regard as the invention.

Claim Rejections - 35 U.S.C. § 102

In the Office Action, claims 68, 69, 72, 73, and 75-80 were rejected under 35 U.S.C. § 102 as being anticipated by MacLeay. The Examiner explains the MacLeay discloses a series of chlorinated azo initiators for olefin polymerization, specifically citing columns 43 and 44, Table I, Examples XXIX-XXXIV, lines 3-21 and column 56, Example LXXVII, lines 36-38. The Examiner states that the azo moiety can initiate a non-ATRP, free radical polymerization, and the chloride moiety can initiate an ATRP polymerization much like the elected species of the Applicants.

Applicants herein present new claims 117-124. The claims as presented are not anticipated by MacLeay. The subject matter of the new claims 117 and 118 describe a multifunctional initiator compound comprising at least one radically transferable atom or group capable of initiating an atom transfer radical polymerization; and at least one initiation group capable of initiating at least one of a cationic, an anionic, a peroxide initiated free radical, a controlled free radical, metathesis, ring opening and coordination polymerization process. As stated above, the initiators of MacLeay are not capable of initializing any of the claimed polymerization processes.

Applicants respectfully submit that since the disclosure of MacLeay does not anticipate independent claim 117, dependent claim 118 is also not anticipated by this disclosure. Applicants also respectfully submit that there is no motivation provided in MacLeay or from the knowledge of one skilled in the art to modify the disclosed compounds to provide a the claimed multifunctional initiator compounds, especially considering that ATRP was not a known polymerization process at the time of filing of MacLeay, March 21, 1974. Additionally, claims 118-122 are directed toward macroinitiators comprising at least one polymer block. MacLeay does not disclose a macroinitiator or suggest or motivate one skilled in the art to prepare a macroinitiator comprising at least one polymerization initiation group.

Certain basic considerations apply to obviousness rejections. The Manual of Patent Examining Procedures ("MPEP") describes the following tenets of patent law which must be adhered to:

- (A) The claimed invention must be considered as a whole;
- (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention and
- (D) Reasonable expectation of success is the standard with which obviousness is determined. *MPEP* §2141, citing *Hodosh v. Block Drug, Inc.*, 786 F.2d 1136, 1143 n.5, 229 U.S.P.Q 182, 187 n.5 (Fed. Cir. 1986).

MacLeay does not provide any suggestion of the desirability of producing a macroinitiator for the preparation of block copolymers comprising at least one initiation site. Specifically, the desirability of a multifunctional polymerization initiator is not suggested, especially, not the desirability of a multifunctional polymerization initiator comprising an ATRP initiation site. No such motivation is found in MacLeay. Even through impermissible hindsight

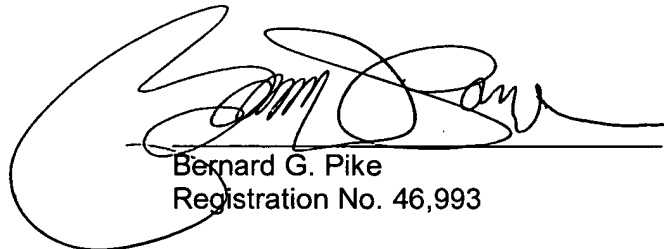
afforded by the claimed invention, the new claims of the subject application do not become obvious to one skilled in the art. Therefore, Applicants respectfully submit that new claims 117-124 are not obvious based upon MacLeay or any reference of record in the subject application.

CONCLUSION

Applicants fully address each basis for rejection under § 112, §102 and §103.

Consideration of the new claims of the subject application is respectfully requested. Applicants submit that the new claims are in condition for allowance. Applicant requests such action at an early date. Should the Examiner have any remaining concerns, he is requested to contact the undersigned at the telephone number below so that those concerns may be addressed without the necessity for issuing an additional Office Action.

Respectfully submitted,


Bernard G. Pike
Registration No. 46,993

Kirkpatrick & Lockhart LLP
Henry W. Oliver Building
535 Smithfield Street
Pittsburgh, PA 15222-2312
Phone: (412) 355-8620
Fax: (412) 355-6501